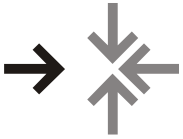
Edit

Application Reference



Release 2.0

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Edit

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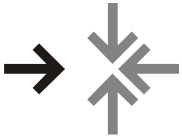


01 - Editing

Editing

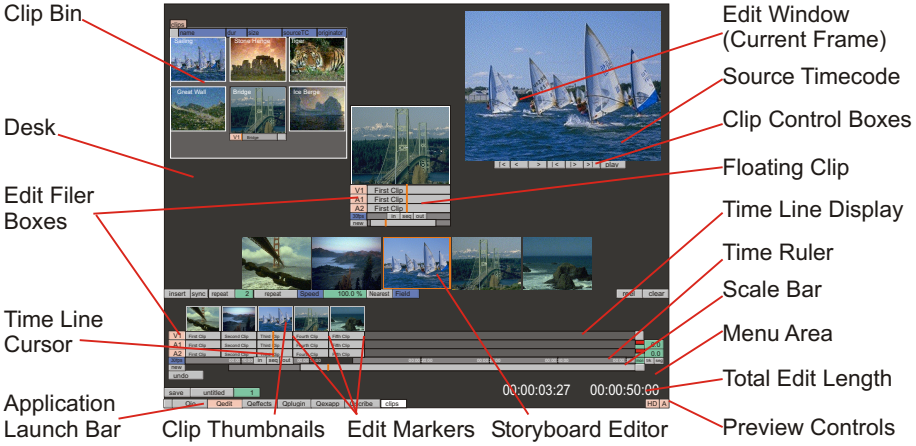
Familiarisation

Starting the Edit Application

The Edit Application is started by pressing the *Edit* box on the 'Application Bar' at the bottom of the menu area.

Using the Edit Application

The Time Line can be cleared of any existing edit by pressing the *clear* box at the right of the desktop above the Time Line.



The 'Clip Bin' provides a visual representation of all video/audio clips managed by the system's library.

See the "Library" section in the Getting Started manual for full details

The 'Edit Window' is a visual representation of the edit on the Time Line and always displays the current frame position. The orange (Current Frame) marker between the *in* and *out* boxes can be dragged forwards and backwards to move the 'Current Frame' position.

'Floating Clips' are miniature editors that allow clip segments to be prepared before they are assembled into an edit on the Time Line. They are created either when a clip from a Clip Bin is dropped onto an empty area of the desktop or when a clip segment is copied from the Time Line as a result of a specific process.

See the "Using Floating Clips" section for details

The 'Desk' is a user area within the Edit application that allows clips and bins to be placed temporarily within the application before being used. Clips can be placed here before being dropped on the Time Line or back in the library. Additional desk space is also available by pressing the trigger on the hand unit.

The Time Line is the heart of the Edit application as it is used to assemble clips, create transitions between clips and provide a method of navigating through the whole edit.

The Time Line Cursor indicates the current frame on the Time Line and can be used to move through the Time Line and set the in and out points of the current clip segment.

See the "Using the Time Line" section for details.

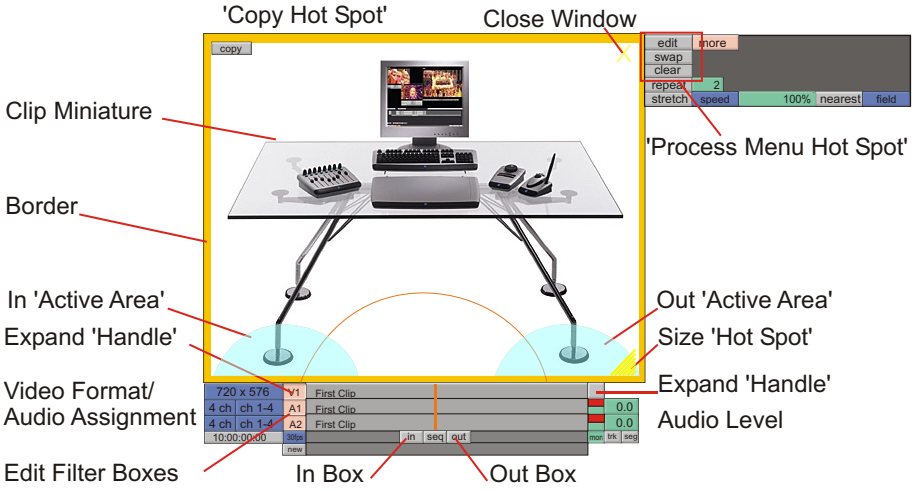
Hidden underneath the Time Line is a storyboard display which allows simple clip assembly and editing to be performed by simply moving the storyboard clips. A 'thumbnail' display is also available as a visual guide to identify clips.

See the "Using the Storyboard" section for details.

Shot Selection

Using Floating Clips

Floating Clips are miniature editors that allow clip segments to be prepared before they are assembled into an edit on the Time Line. They are created either when a clip from a Clip Bin is dropped onto an empty area of the desktop or when a clip segment is copied from the Time Line as a result of a specific process. Note that a green border indicates that the clip is over a suitable area of the desktop.



The size of the ‘Floating Clip’ can be adjusted by pressing on the ‘Size Hot Spot’ and dragging the window to the required size. Tapping on this spot will place the ‘’Floating Clip’ next to the ‘Edit Window’.

When clips are taken from the Clip Bin their current frame positioning is maintained. Likewise when a Floating Clip is placed back in the Clip Bin the current frame position will be maintained.

Expanding Hidden Menus using ‘Handles’

When first created, a Floating Clip will have only a single bar showing the V1 box and the clip title. Placing the cursor over the V1 box (’handle’) and dragging the pen down will open up the audio bars and other menus. Dragging the V1 box to the right will display the video/audio format of the clip. Likewise pressing the handle on the right of the Time Line will allow the current audio settings for the clip to be displayed.

Setting In and Out Points

The In and Out points on a clip segment are best set on the segment before it is placed into the edit. This can be done by placing the clip on the desktop as a Floating Clip. The in and out points on the clip can be adjusted using the following methods:

Pressing in the ‘In Active Area’ and moving the pen in a circular motion will move the in point. Likewise moving the pen in the ‘Out Active Area’ will move the out point.

The in and out points of a Floating Clip can be altered using the *in* and *out* boxes at the bottom of the Floating Clip window. Pressing the *in* box and then dragging it to the right will move the in point to later in the clip. Pressing the *out* box and then dragging it to the left will move the out point to earlier in the clip.

The In and Out points are displayed in the Floating Clip and in the ‘Edit Window’ by blue serrations along the left and right edges of the picture.

By selecting individual ‘Edit Filer’ boxes first (i.e. the V, A1, A2, A3 and A4 boxes) individual or groups of video and/or audio tracks can be altered at the same time and independently of the unselected tracks.

When this clip is placed on the Time Line it will use the in and out points that have been set up on the Floating Clip. This can either be done by selecting the ‘Edit Hot Spot’ at the top of the Floating Clip or by dragging the clip to the Time Line or to the ‘Edit Window’.

Using Hot Spots

The 'Hot Spot' at the top and right of the window (when the *More* box is selected) are used as follows:

Copy — The *Copy* function copies the selected segment (between the in and out points) of the current Floating Clip to the desktop. This can be used to make different versions of the same clip. When in/out points are set only the segment between these points is copied.

Lift — The *Lift* function enables the section of the clip between the in and out points to be lifted out and placed on the desktop leaving a gap in the middle of the clip.

Rem — The *Remove* function acts the same as *Lift* but instead of leaving a gap, the end section slides along to close the gap.

Clear — The *Clear* function clears the current in and out settings for the clip.

Swap — The *Swap* function swaps over the current Floating Clip with the current clip on the Time Line.

Edit — The *Edit* function places the selected clip segment onto the Time Line at the current Time Line cursor position.

Repeat — The current frame can be repeated by the number in the green box next to *Repeat*. Set the Repeat value then press *Repeat*. The repeated frame will be placed on the desktop.

Stretch — The clip can be stretched to a new length either by using a percentage value of the clip or to a specific timecode duration. Set up the values of Speed/Time in the green numeric box next to the *Stretch* box then press *Stretch*. The stretched clip will be placed in the library with the original title + "stretched".

Note that stretching a clip will discard any audio tracks associated with the clip.

Dissolve When multiple segments have been assembled using a 'Floating Clip', placing the Time Line cursor on the edit point and selecting the hidden More box (appearing when the cursor is placed over the top-right corner of the 'Floating Clip') now displays a new *Dissolve* box. This allows a simple dissolve to be applied to the edit.

Appending Floating Clips on the Desktop

If one Floating Clip is dragged and dropped onto another Floating Clip then the second clip will be appended to the first. This method can be used to simply assemble clips in the required order before transferring them to the Time Line.

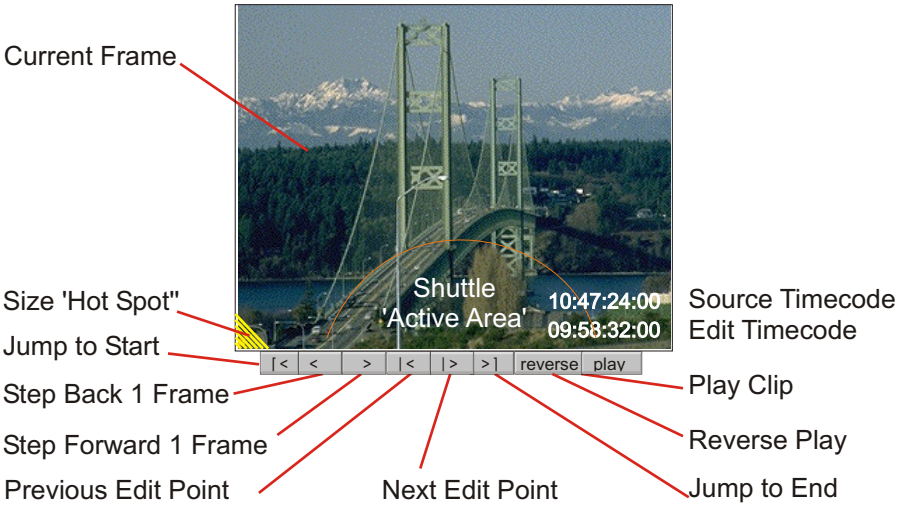
Inserting Clips into Floating Clips

To fill a gap in a Floating Clip, pick up the new clip and hold down the <Ctrl> key while dropping the new section over the Floating Clip.

To insert a clip between two others hold down the <Shift> key and drag and drop the clip over the required Floating Clip.

Using the Edit Window

The ‘Edit Window’ is a visual representation of the edit on the Time Line and always displays the current frame position. The orange (Current Frame) marker between the in and out boxes can be dragged forwards and backwards to move the ‘Current Frame’ position.



The control boxes at the bottom of the ‘Edit Window’ can be used to navigate through the clips on the Time Line. The ‘Edit Window’ displays the ‘Current Frame’ at all times and is used to preview the clips on the ‘Time Line’.

When the cursor is placed in the centre of the ‘Shuttle Active Area’ a yellow diamond appears. Pressing on this diamond and sliding the cursor to the right will shuttle forward through the clip. Sliding left will shuttle backwards through the clip. The shuttle speed is affected by the distance the cursor is moved from the centre of the diamond.

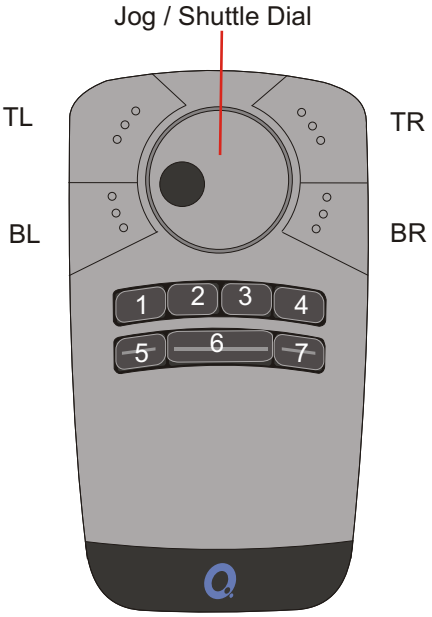
Pressing in the ‘Shuttle Active Area’ and moving the pen in a circular motion will move (or shuttle) through the clip segments on the Time Line. When jogging through a clip using circular motions with the cursor, a small wheel appears to indicate the direction of movement.

The size of the ‘Edit Window’ can be adjusted by pressing on the ‘Size Hot Spot’ and dragging the window to the required size. Tapping on this spot will return the ‘Edit Window’ to its default size.

The timecode of the current frame is displayed in the bottom right corner of the window and this can be switched between edit timecode and source timecode by tapping in the area directly above it.

Note that the ‘Edit Window’ is only a visual representation of the clips on the Time Line. For an accurate preview the system’s main output should be displayed on an appropriated video monitor.

Using the Jog/Shuttle Panel



Button 1 - marks the first frame of the clip segment and is used in conjunction with button 4 to select a clip segment for copying or lifting.

Button 2 - is used to select all of the current clip segment.

Button 3 - is used to clear marks.

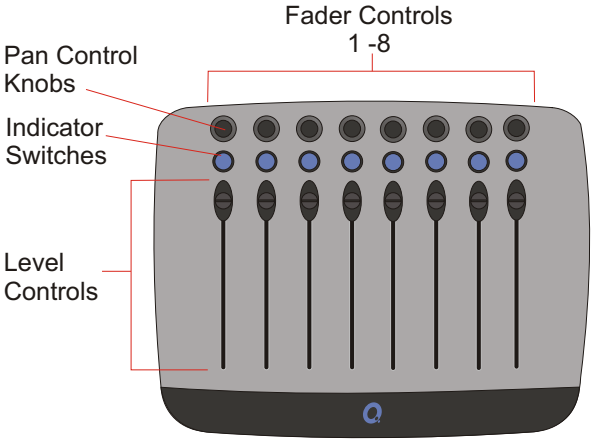
Button 4 - marks the last frame of the clip segment and is used in conjunction with button 1.

Button 5 - when pressed will jump the current frame cursor to the previous edit point on the Time Line.

Button 6 - when pressed will start and stop the clip currently in the ‘Edit Window’.

Button 7 - when pressed will jump the current frame cursor to the next edit point on the Time Line.

Using the Fader Panel



The Fader Panel can be used to allow greater control over the substance of an audio edit. To this end, it has eight assignable level controls.

Note that the audio tablet is only operable when faders have been assigned.

The LEDs indicate the assignment of an audio track to the fader. Fader 1 controls audio track 1, fader 2 controls audio track 2, etc upto a total of 8 audio tracks.

The level controls are touch sensitive and allow the audio levels to be altered manually.

When a clip with manually modified audio is played through, the sliders will move to the appropriate levels as previously set.

If the *seg* button is selected, the audio level of the current segment in the selected audio track (enabled by the filter boxes A1, A2, A3 etc at the left end of the Time Line or Floating Clip) can be changed using the corresponding track slider on the fader panel.

If the *fader* button is selected, the level of the track can be changed dynamically as it is played using the corresponding track slider on the fader panel. This will be indicated by white nodes on the audio track.

If the *track* button is pressed, the level for the whole audio track can be increased or decreased by the amount entered in the corresponding track slider on the fader panel.

Using the Storyboard

Introduction

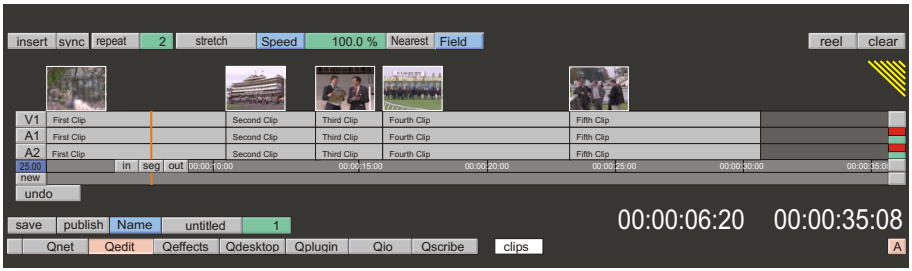
Hidden underneath the Time Line is a storyboard display which allows simple clip assembly and editing to be performed by simply moving the storyboard clips. A ‘thumbnail’ display is also available as a visual guide to identify clips. The storyboard clip in the centre with the orange border is the clip currently being displayed in the ‘Edit Window’.

Displaying the Storyboard

The storyboard display is accessed either by selecting the *Reel* box to the left of the Time Line or by pressing down on the blank area in the menu between the blue *Field* box and the *Clear* box then sliding up with the pen. The storyboard can be hidden by pressing the pen in the centre of a storyboard clip then sliding down.

Displaying the Clip Thumbnails

The clip thumbnails are accessed by pressing down on the blank area of the menu just above the Time Line and then sliding up or by turning on the *pics* box.The clip thumbnails can be hidden by pressing in the centre of a thumbnail and sliding down or by turning off the *pics* box.



Opening and Closing Storyboard Clips

Pressing in the bottom-right corner of any storyboard clip and sliding right or left will open up the clip (to display all of the frames) or close it to show a single frame (normally the first frame).

Jumping to Edit Points

Pressing in the centre of a storyboard clip or a clip thumbnail will jump to the first frame in that clip segment (i.e. its edit point).

Inserting a Clip

A clip from the Clip Bin or a Floating Clip can be inserted between two clips by dragging it over one of the storyboard clips (i.e. the one with the yellow border) and releasing. The new clip will be inserted at the end of the clip with the yellow border.

Removing a Clip

A clip segment can be removed from the edit by pressing down on the storyboard clip then dragging it up to an empty area of the desktop and releasing pen pressure.

Copying a Clip to the Desktop

Pressing the hidden *Copy* box on any storyboard clip will place an exact copy of the clip on the desktop as a Floating Clip.

Trimming Tails

Any clip segment can be trimmed by copying it (or removing it) from the edit, setting the new in/out points, making a new copy then placing the new copy back into the edit.

Editing Using the Time Line

General Editing Process

Editing is performed by assembling clip segments on a Time Line in various different ways:

by dragging them from either a Clip Bin or from the desktop and dropping them on to the Time Line or the Edit Window. This process automatically butt splices the clips together in the order they were dropped.

by using the 'Edit' hot spot on the Floating Clips to add the currently selected clip segment to the Time Line at the current Time Line Cursor position.

by swapping the contents of a Floating Clip with the current contents of the Time Line.

by dropping a clip on the Story Board editor above the Time Line.

The clips can be trimmed (i.e. their in and out points shortened) directly on the Time Line or they can be trimmed before they are arranged into the edit by first dropping them onto the desktop in the form of Floating Clips.

The first clip placed on the Time Line defines the initial video format, start timecode and audio track assignments for the following clips assembled on the Time Line. The first clip should therefore have the settings that are required for the whole edit.

Edit Aware Effects Processing

The Paintbox application can be used as part of an edit aware effects workflow to allow clip segments to be processed within the edit itself and allow selected segments to be rendered or saved independently.

If an edit is present on the Time Line in the Edit application then moving to the Paintbox application will maintain edit awareness while working within Paintbox. In this workflow mode when moving between the applications the current frame, current segment, current zoom and application settings are maintained.

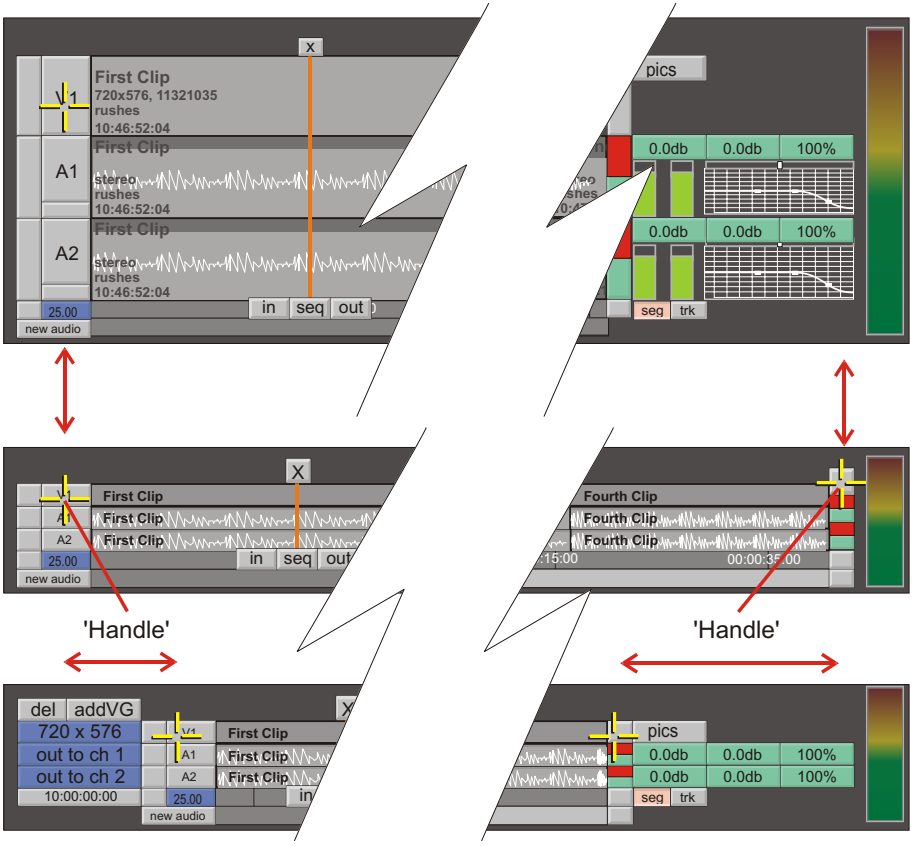
If the clip is left un-rendered, returning to Edit will allow editing to continue at that specific point on the edit and allow the clip to be rendered at a later stage. The un-rendered clip segments will be displayed beige on the Time Line to indicate that they need to be rendered. Also if the segment is played then a still (showing the first rendered frame of the clip) will be displayed with a yellow and black chequer board symbol in the top left corner.

Once a clip has been rendered, returning to Edit will show the segment as grey to indicate that no rendering is required and the rendered clip segment can be played.

Using the Time Line

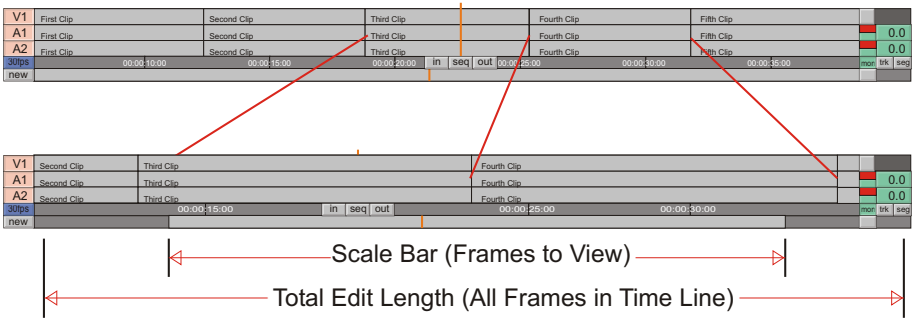
Displaying Hidden Menus using ‘Handles’

By pressing on a ‘Handle’ and dragging the pen left or right, additional menus can be displayed or hidden. The Time Line can also slide up (by pressing on the Handles and dragging up) to display more of the video and audio tracks or can slide down (by dragging down) to hide all except the V1 track.



Scaling the Time Line

The scale of the Time Line display can be changed using the ‘Scale Bar’ at the bottom of the Time Line below the ‘Time Ruler’.



The width of the ‘Scale Bar’ will determine the number of visible frames of the actual clips arranged on the Time Line. By placing the cursor on the ‘Scale Bar’ and dragging up or down, the Time Line can be zoomed-in or out. By dragging the lighter part of the Scale Bar left or right different sections of the whole edit can be viewed on the Time Line.

The Time Line can also be scaled by making a lasso in the bottom blank parts of the menu.

To increase the scale, place the pen (for the bottom-right corner of the lasso) in a blank area above the Time Line then draw the box cursor into the top-left corner (to make a lasso) and release the pen pressure.

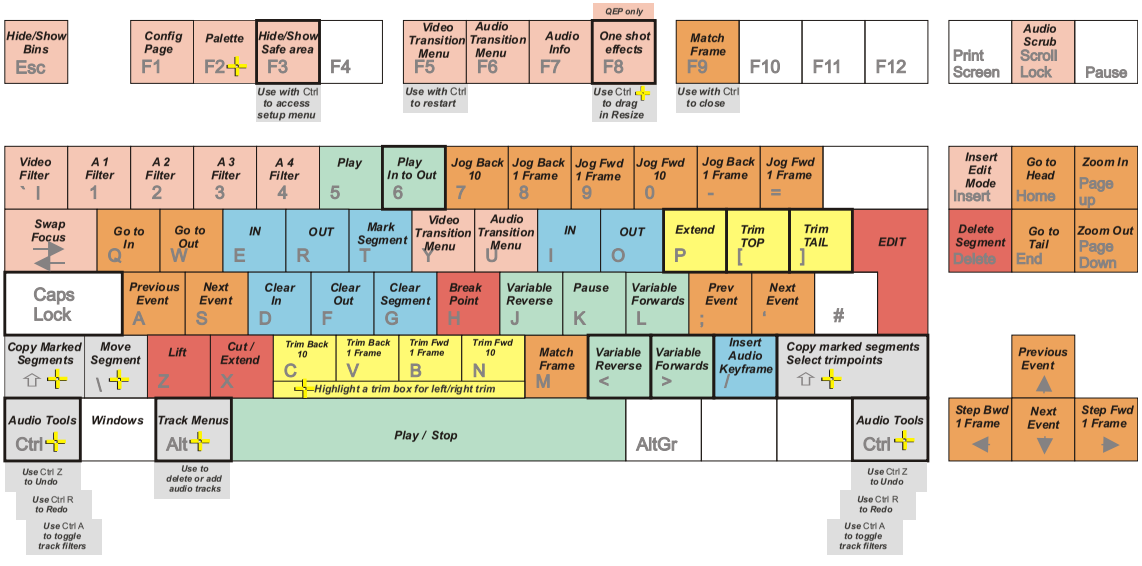
To decrease the scale, place the pen (for the bottom-right corner of the lasso) in a blank area below the Time Line then draw the box cursor, staying in the blank area (for the top-left corner of the lasso) and release the pen pressure.

Segment Information

Each video and audio track segment on the Time Line includes specific information about the segment's origin. As the Time Line is expanded vertically using the V1 handle the following information is revealed:

Original Clip Title
Video Format/Resolution
Aspect Ratio
Audio Content (i.e. mono, stereo or quad as defined at recording)
In timecode
Out timecode
Duration
Tape Name

Keyboard Map



KEYBOARD MAP for editing

release 2.0

Keyboard Navigational Shortcuts

<Space Bar>	Pressing the space bar will start or stop playing the clip edit currently on the Time Line.
<→>	Pressing the right arrow key will step the current frame position on the Time Line clip forward 1 frame.
<←>	Pressing the left arrow key will step the current frame on the Time Line clip backward 1 frame.
<↓>, <S>, < ' >	Pressing these keys will step the current frame on the Time Line to the next edit point.
<↑> ,<A>, < ; >	Pressing these keys will step the current frame on the Time Line to the previous edit point.
<J>, < , >	Pressing these keys will slowly play the clip backwards from the current frame on the Time Line. Repeated presses will increase the speed.
<K>	Pressing this key will pause the playing clip.
<L>, < . >	Pressing these keys will slowly play the clip forwards from the current frame on the Time Line. Repeated presses will increase the speed.
<5>	Pressing these keys will play the clip forwards at normal speed.
<6>	Pressing this key will play the clip forwards at normal speed from the in point to the out point.
<7>	Pressing this key will jog backwards 10 frames through the clip from the current frame on the Time Line.
<8>	Pressing this key will jog backwards 1 frame through the clip from the current frame on the Time Line.
<9>	Pressing this key will jog forwards 1 frame through the clip from the current frame on the Time Line.

<0>	Pressing this key will jog forwards 10 frames through the clip from the current frame on the Time Line.
<Home>	Pressing this key will jump to the first frame on the Time Line.
<Page Up>	Pressing this key will zoom-in the Time Line around the current frame. Repeated presses will increase the zoom. The TAB key can be used to swap focus from the Time Line to the Floating Clip window.
<End>, <] >	Pressing these keys will jump to the last frame on the Time Line.
<Page Down>	Pressing this key will zoom-out the Time Line about the current frame. Repeated presses will decrease the zoom. The TAB key can be used to swap focus from the Time Line to the Floating Clip window.

Keyboard Editing Shortcuts

<Enter>	If a Floating Clip is selected (i.e. its border is white) pressing the Enter or Return key will place the clip on the Time Line at the current Time Line Cursor position. If the Time Line is selected (i.e. no Floating Clip enabled) then pressing the Enter or Return keys will insert an edit point at the current position of the Time Line Cursor. Note that the Tab key can be used to swap the focus between the Time Line and the Floating Clip.
<H>	Pressing this key will insert a break point at the current Time Line cursor position.
<Insert>	Holding down this key will select Insert Edit mode. The TAB key can be used to swap focus from the Time Line to the Floating Clip window.
<M>	Pressing this key will select Match Frame mode.
<Q>	Pressing this key will jump to the currently selected In Point.
<W>	Pressing this key will jump to the currently selected Out Point.
<E>, <I>	Pressing these keys will mark an In Point at the current Time Line cursor position.
<R>, <O>	Pressing these keys will mark an Out Point at the current Time Line cursor position.
<T>	Pressing this key will mark a segment between the current Time Line cursor position and a previously established in or out point.
<D>	Pressing this key will clear the currently assigned in point.
<F>	Pressing this key will clear the currently assigned out point
<G>	Pressing this key will clear the currently selected segment

<Z>	Pressing this key will allow the current segment on the Time Line to be lifted.
<P>	Pressing this key will extend the end of a clip segment from its current position to the current Time Line cursor position.
<C>	If the Time Line cursor is placed on an edit point, then pressing this key will trim back 10 frames from this edit point. If the Time Line cursor is placed elsewhere then pressing this key will move the edit point to the current Time Line cursor position and trim from there.
<V>	If the Time Line cursor is placed on an edit point then pressing this key will trim back 1 frame from this edit point. If the Time Line cursor is placed elsewhere then pressing this key will move the edit point to the current Time Line cursor position and trim from there.
<B>	If the Time Line cursor is placed on an edit point then pressing this key will trim forward 1 frame from this edit point. If the Time Line cursor is placed elsewhere then pressing this key will move the edit point to the current Time Line cursor position and trim from there.
<N>	If the Time Line cursor is placed on an edit point then pressing this key will trim forward 10 frames from this edit point. If the Time Line cursor is placed elsewhere then pressing this key will move the edit point to the current Time Line cursor position and trim from there. Pressing this key will trim forward 10 frames from the current edit point.
< [>	Placing the Time Line cursor after an edit point then pressing this key will trim the start of the clip (i.e. 'top') the clip segment to the current frame.
<] >	Placing the Time Line cursor before an edit point then pressing this key will trim the end of the clip (i.e. 'tail') the clip segment to the current frame.
< / >	Insert Audio Node.

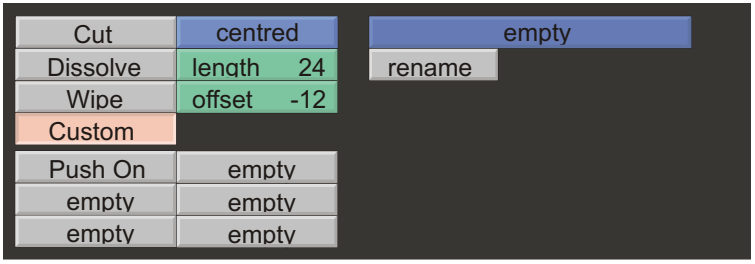
Keyboard Control Shortcuts

<Esc> Pressing this key will close any open bins on the desktop.

<F4> Crash record. This will automatically launch the io application and start recording from the currently selected input.

<F5>, <Y> Video Transition Menu

Selecting the <F5> or <Y> keys on the keyboard will display a simple video transition menu that allows a cut, dissolve, wipe or custom transition to be selected.

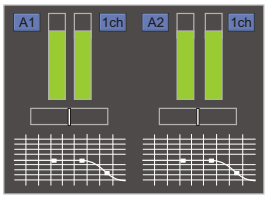


The actual settings used for the wipe, dissolve or custom transition (for example wipe shape and its position about the edit point) will be those previously set up in the Trim Window (accessed by making a lasso around an edit point) but these can be changed as required.

<F6>, <U> Audio Transition Menu

Selecting the <F6> or <U> keys on the keyboard will display a simple audio transition menu.

<F7> Audio Information Menu



Selecting the <F7> key on the keyboard will display a simple audio information display. This display allows the audio track/segment levels and the graphic equalizer settings to be adjusted in the same manner as on the Time Line.

<F8> Pressing this key will show/hide the one shot image corrector menu on Edit Pro systems.

<F9> Pressing this key will select Match Frame mode.

< ` > Pressing this key will toggle on and off the video track filter (V1) on the Time Line or Floating Clip, depending on current focus (Tab key).

<1> Pressing this key will toggle on and off the audio track filter (A1) on the Time Line or Floating Clip, depending on current focus (Tab key).

<2> Pressing this key will toggle on and off the audio track filter (A2) on the Time Line or Floating Clip, depending on current focus (Tab key).

<3> Pressing this key will toggle on and off the audio track filter (A3) on the Time Line or Floating Clip, depending on current focus (Tab key).

<4> Pressing this key will toggle on and off the audio track filter (A4) on the Time Line or Floating Clip, depending on current focus (Tab key).

<Tab> Pressing this key will Swap 'focus' between output window and Floating Clips on the desktop.

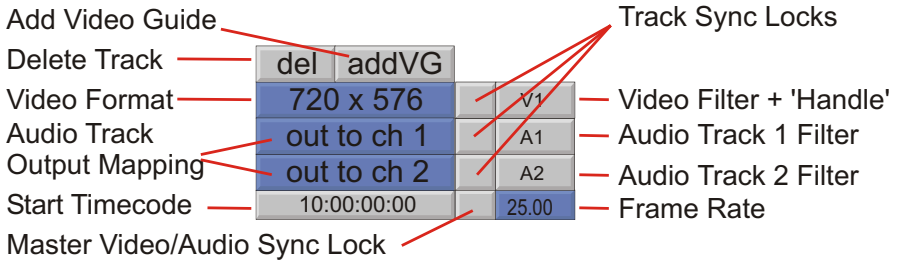
< \ > Holding down this key will select the current clip segment and allow it to be trimmed.

<Scroll> Lock	Pressing this key will toggle between audio scrub/audio snippet play out mode. With audio scrub selected the pitch of the audio will change to match the speed at which the clip is played or re-wound.
+<Ctrl><Z>	Holding down the <Ctrl> key and pressing the <Z> key will undo the last operation.
+<Ctrl><R>	Holding down the <Ctrl> key and pressing the <R> key will redo the last edit action that was undone.
+<Ctrl><A>	Holding down the <Ctrl> key and pressing the <A> key will toggle on and off the video and audio track filters on the Time Line or Floating Clip, depending on current focus (Tab key).

Setting up the Edit Environment

General

Before assembling any clips on the Time Line, various decisions need to be made about what is required for the completed edit. These decisions include selecting the frame rate, the video format, the start timecode and the audio track assignments for the whole edit.



Setting the Total Edit Length

Before editing material on the desktop, it is advisable to set the total length of the edit that is to be assembled using the Time Line. This can only be done from an empty Time Line after *Clear* has been selected. The total edit length is set in the timecode box in the right-hand corner of the menu area.

Setting the Frame Rate to be Used

Before assembling material on the Time Line, the output frame rate should be set to suit the final output format. This will ensure optimum image quality and prevent unpleasant artifacts.

Pressing the <F1> key will display the system's setup and configuration menu. The Editor menus are used to select how clips are played on the desk. The blue FPS box allows video clips to be treated as 24, 25 or 30 frames per second during editing. The *Drop Frame* box is used to select whether drop frame or non drop frame timecode operation is used during editing.

Defining the Output Video Format

By default the first clip placed on the Time Line will define the initial video format for the following clips assembled on the Time Line. Therefore the first clip should be that of the proposed output aspect ratio.

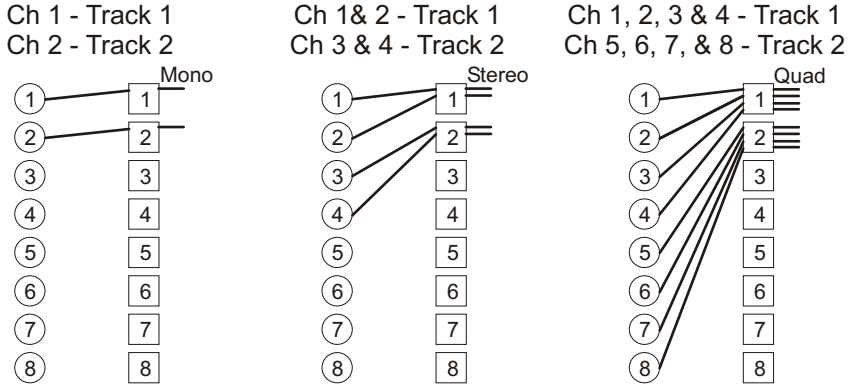
Note that the current video format is displayed in the hidden menu at the left-hand end of the Time Line (accessible by pulling the V1 box handle to the right).

Defining the Start Timecode

By default the first clip placed on the Time Line will define the start timecode for the final edit. This can be changed using the timecode box hidden at the left-hand end of the Time Line.

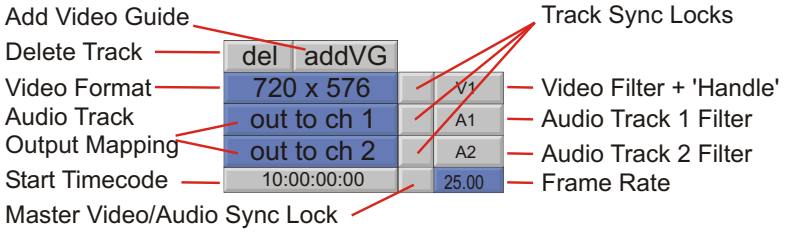
Setting the Audio Track Output Assignment

When material is recorded into the system, using the *Record* menu, the required audio channels (i.e. ch 1, ch 2, etc.) from the source VTR are assigned to the system's internal tracks (i.e. A1, A2, A3, etc. up to A8). These internal tracks can be a single channel of audio (mono), a pair of audio channels (a stereo pair of channels 1 & 2, 3 & 4, 5 & 6 or 7 & 8) or a whole audio group (channels 1, 2, 3, 4 or 5, 6, 7, 8).



When any clip is edited using Edit, the audio assignments that have been set up during recording will be used. It is therefore important that a consistent audio assignment is used for all clips recorded, especially if these clips are to be edited together.

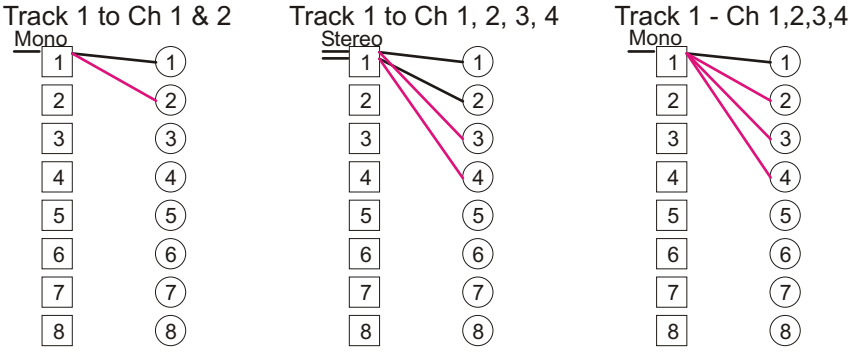
The system's internal audio tracks can be mapped to individual output audio channels using the blue scrolling boxes hidden to the right of the Time Line. These settings affect how each audio segment (which can be mono, stereo or Quad) on the track is to be played out.



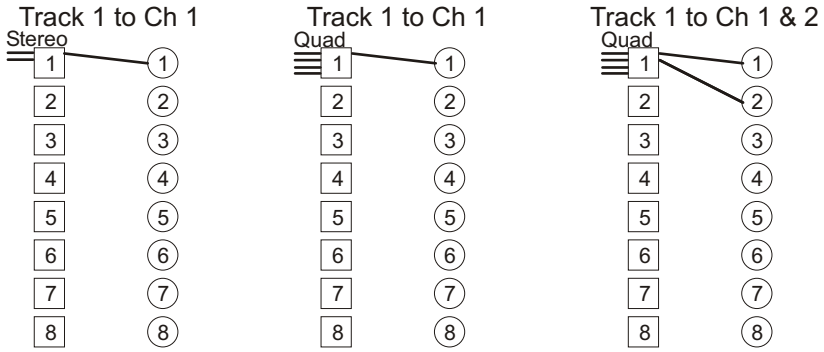
When mapping the Time Line audio tracks to output channels, the system will make certain assumptions. These affect instances where there are too many track channels for the selected output channel (for example outputting a quad track as a single channel) or when there are too few Time Line track channels for the selected output channels (for example outputting a mono track as a quad).

Where there is a difference in audio assignments between clips on the Time Line the system will automatically re-assign the audio channels.

When there are too few channels on the track segment for the selected output channels, the system will automatically duplicate the most appropriate track segment channel. For example routing a mono track to channels 1 & 2 will place the mono channel on both channel 1 and channel 2. If, however, a stereo track is to be output as a quad (channels 1, 2, 3 & 4) then the stereo pair 1 & 2 will also appear on channels 3 & 4.



When there are too many track segment channels available for the selected output channels then the system will not play-out the un-used channels. For example routing a stereo track to channel 1 will discard the second channel.



Arranging Clips on the Time Line

By default, clip segments are arranged in the correct order using the Time Line at the current Time Line Cursor position. If the cursor is placed in the middle of a clip segment then dropping a clip on the 'Edit Window' or the Time Line will overwrite the last frames of the current clip segment.

Clips are placed on the Time Line one at a time in the following ways:

by pressing the clip title in a Clip Bin then dragging and dropping them on the Time Line or the 'Edit Window'.

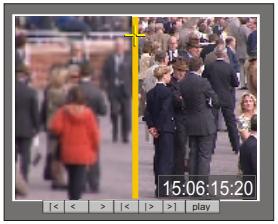
by dragging a Floating Clip (by placing the pen cursor on the clip miniature) and dropping it on the Time Line or the 'Edit Window'.

by pressing the 'Edit' hot spot at the top of a Floating Clip.

by dropping a clip on the picture editor above the Time Line.

Split Screen Shot Matching

Shot matching between the edit on the Time Line and a reference clip (such as an offline edit) can be achieved by placing the reference video on the reference video track (VG).



Where a clip segment is present on this video reference track the ‘Edit Window’ will be split vertically to display the reference clip in the left-hand side and the Time Line edit clip in the right-hand side.

To create a reference video track select the *addVG* box (hidden to the left of the V1 box on the Time Line) and an empty video track will then appear below the V1 video track on the Time Line. Place the reference video clip here and it will be locked to the Time Line.

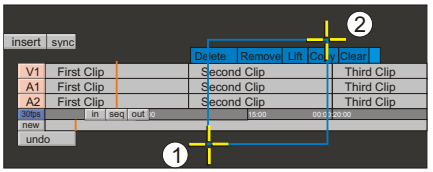
As with the video and audio tracks, multiple segments can be placed on the reference video track and they can be re-ordered and slipped as required.

The reference video track can be deleted by selecting the *del* box then pressing the *VG* box.

The position of the slip can be changed by pressing on the yellow dividing line and dragging it to a new position. Tapping on the line will toggle between a vertical and horizontal split.

Lifting and Replacing Video/Audio Tracks

Any track (video or audio) segment between edit points can be lifted from the Time Line and placed on the desktop while leaving the format of the edit intact. To select tracks from a specific segment press the *seg* box on the Time Line Cursor, the <Insert> key on the keyboard or make a lasso (from bottom-left to top-right) around the required segment.



① Place the pen cursor in the menu area as shown and press down. Drag the blue box cursor to form the top-right corner of a box highlighting the clip to be selected and then ② release pen pressure.

This displays blue boxes at the top of the selected clip segment that allow the segment to be removed, lifted or copied. The length of the segment is displayed numerically. This allows the exact number of frames within the selected segment to be seen. Use the Edit Filter boxes (i.e. V1, A1, A2, A3, A4) to select the required segment from specific tracks. Using the Edit Filter boxes audio segments can be moved vertically to empty audio tracks.

The *Remove* box allows the selected tracks from the selected clip to be removed from the edit closing the gap on the Time Line. The removed clip will be placed on the end of the pen. Note that clips can be re-inserted into the edit using the Insert *function*.

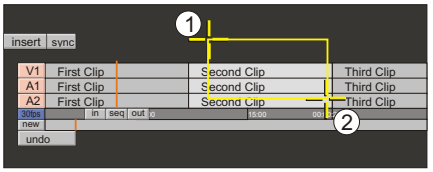
The *Lift* box allows the selected tracks from the selected clip to be removed from the edit leaving a space on the Time Line. The lifted clip will be placed on the end of the pen. If the Shift key on the keyboard is held down before the *Lift* box is pressed, the selected tracks can be moved (or slipped) along the Time Line therefore forcing any tracks before or after to be moved accordingly.

The *Copy* box will make a copy of the selected tracks of the selected clip and place them on the desktop as a Floating Clip. Pressing the *Clear* box will clear the selection.

Note that dropping Floating Clips back on the Time Line will place them at the Current Frame position in the edit and not necessarily where they were taken from when *Remove* or *Copy* were used.

Slipping Clip Segments on the Time Line

Any clip on the Time Line can be slipped with respect to the others by making a lasso around the required clip from top-left to bottom right.



① Place the pen cursor in the menu area as shown and press down. Drag the yellow box cursor to form the bot tom-right corner of a box highlighting the clip to be slipped then ② release pen pressure.

This displays a green numeric box which can be used to advance or delay the start of the selected clip.

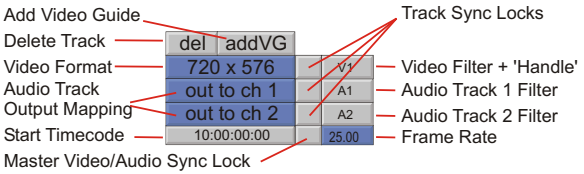
Pressing the *Over* box and dragging allows the currently selected clip segment(s) to trim adjacent segments without changing the edit position of the unselected segments.

Pressing the *Slip* box and dragging allows the content of the selected segment to be moved (or slipped) within its marked in and out points without changing the position of the segment in the edit.

Pressing the *Slide* box and dragging allows the currently selected clip segment(s) to be moved earlier or later in the edit over adjacent segments without changing the edit position of the unselected segments.

Note that individual audio tracks can be slipped by protecting the other tracks using the Edit Filter boxes.

Edit Filter Boxes



The Edit Filter boxes at the left of the Time Line are used to enable specific Video and Audio tracks before processing (i.e. copying, slipping, moving, replacement, etc).

When an Edit Filter box is turned on (i.e. pink) the corresponding track will be used during processing. If it is turned off it will not be used.

The Edit Filter boxes can be used to protect tracks before performing video-only or audio-only editing and when replacing clip segments on the Time Line.

Stretching a Clip

The current clip on the Time Line can be stretched to a new length either using a percentage value of the clip or to a specific timecode duration.

Place the Time Line Cursor on the clip, set up the values of Speed/Time in the green numeric box next to the *Stretch* box then press *Stretch*. The stretched clip will be placed in the library with the original title + “stretched”.

Note that stretching a clip will discard any audio tracks associated with the clip.

Repeating a Segment

A clip segment between in and out points can be repeated by the number in the green box next to *Repeat*.

Select the clip segment by placing the Time Line Cursor on the required clip, set the Repeat value then press *Repeat*. The repeated clip segment will be placed on the desktop.

Cursor to Cursor Editing

A clip segment can be added to the edit on the Time Line by defining two specific points. The in point on the Time Line and the in point of the clip segment.

The Floating Clip Cursor and the Time Line Cursor can be used to define the in points. Pressing the *Edit* box on the 'Floating Clip' will then place the clip segment on the Time Line to the right of the current Time Line Cursor position.

Any material before the Floating Clip Cursor position will be treated as the in tail.

3 Point Editing

Simple

A clip segment added to the edit on the Time Line is defined by three specific points. These are the position in the edit where a segment it to be placed and the in and out points of the clip segment itself.

The Time Line Cursor defines where on the Time Line a clip segment is to be placed. The in and out points can be defined on the 'Floating Clip' then when the *Edit* box is pressed the in frame of the clip segment will be placed to the right of the Time Line Cursor position.

Time Line In Point

A variation of the 'Simple' 3 Point Edit is to insert an in point on the Time Line first by using the *in* box on the Time Line Cursor. Pressing the *Edit* box on the 'Floating Clip' will append the clip segment (defined by its in and out points) to the edit on the Time Line at its in point. Matching the in point of the Time Line with the in point of the clip segment.

Back Timing

Another variation of the 'Simple' 3 Point Edit is to insert an out point on the Time Line first by using the *out* box on the Time Line Cursor. Pressing the *Edit* box on the 'Floating Clip' will append the clip segment (defined by its in and out points) to the edit on the Time Line before its out point, matching the out point of the Time Line with the out point of the clip segment.

The clip segment will be back-timed from the Time Line out point and if the segment is too long it will replace any frames from the previous clip segment that are overlapped. To protect any existing clip segments, the Time Line Cursor can be placed appropriately to effectively mark the in point for the Time Line edit.

Note that if required the in point on the Time Line can be marked by using the *in* box on the Time Line Cursor.

Out to Out Editing

A clip segment can be added to the edit on the Time Line by defining two specific points: the out point on the Time Line and the out point of the clip segment.

The Floating Clip Cursor and the Time Line Cursor can be used to define the out points. Pressing the *Edit* box on the 'Floating Clip' will then place the clip segment on the Time Line to the left of the current Time Line Cursor position.

The clip segment will be back-timed from the Time Line out point and if the segment is too long it will replace any frames from the previous clip segment that are overlapped. To protect any existing clip segments, the Time Line Cursor can be placed appropriately to effectively mark the in point for the Time Line edit or an in point can be placed on the Time Line.

Sync Editing

A clip segment on the Time Line and a clip in a 'Floating Clip' can be matched at a specific frame. This is done by placing the Time Line Cursor on the specific frame on the Time Line clip and by placing the Floating Clip Cursor on the specific frame on the 'Floating Clip'.

If *Sync* is enabled when the Floating Clip is dropped on the Time Line it will be matched to the current Time Line Cursor position.

If the in and out points have been set on the 'Floating Clip' then the clip segment between these two points will be placed in the edit. If the in and out points have not been set the whole clip segment will be used.

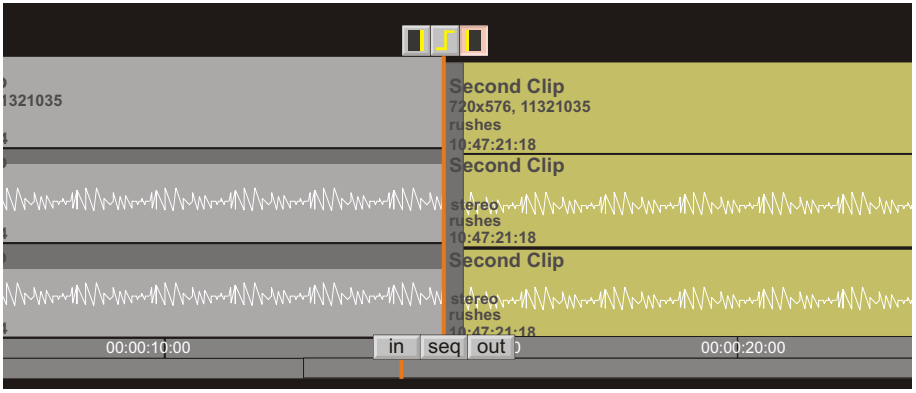
Insert Editing

If the *Insert* box is enabled then new clip segments can be inserted between an existing segment on the Time Line effectively splitting the existing segment and the current Time Line Cursor position.

If the in and out points have been set on the 'Floating Clip' then the clip segment between these two points will be inserted. If the in and out points have not been set the whole clip segment will be inserted.

Extend/Trim Function

The trim boxes appear on the top of the Time Line Cursor when at an edit point. When pressed, they provide a visual indication of the direction and type of trim to be performed.



The Left Trim box (trim under) allows the out point of the first clip to be moved. Dragging the box left will shorten the first clip by slipping it under the edit. Dragging the box to the right will lengthen the first clip by exposing un-used frames of the out tail.

The Centre Trim box that appears on the top of the Time Line Cursor when at an edit point allows the edit to be dragged to a new position with respect to the 2 clip segments.

The Right Trim box (trim over) allows the in point of the second clip to be moved. Dragging the box to the left shortens the second clip by slipping it under the edit. Dragging the box to the right will lengthen the second clip by exposing un-used frames from the in tail.

Moving to a different position on the Time Line and pressing the < X > or the <P> key on the keyboard will automatically move the edit to that position.

Complex Trims

When different edit points on different tracks need to be trimmed at the same time complex trims can be performed.

Place the Time Line cursor on the main edit point (normally the video track) that is to be adjusted and select the centre trim box.

This will select the nearest edit point (highlighted in yellow) on each of the currently enabled tracks. Hold down the <⇧> key and then select the subsidiary edit points to be trimmed by pressing the cursor on their particular edit points. These will also turn yellow to indicate that they have been selected. Pressing directly either side of the edit point with the <⇧> key will allow the selected segment to be slipped over or under the other segments.

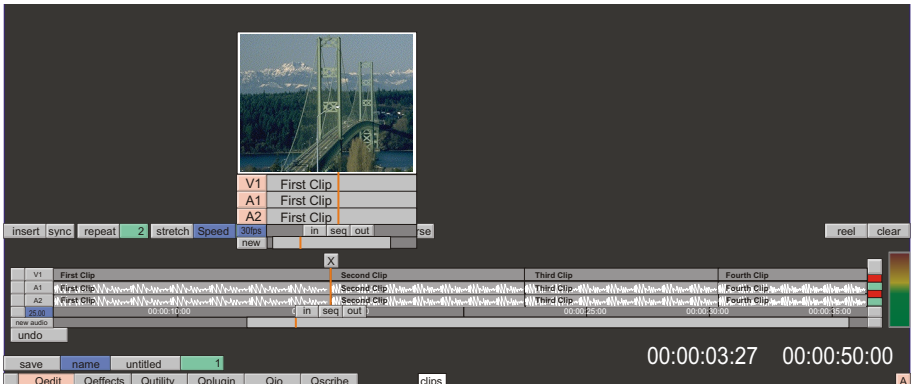
Edit points on tracks that are not to be included in the trim can be de-selected by pressing on their yellow edit points.

Press and drag the centre trim box to move the edit point to the required new position and all selected edit points will move together. Pressing the left trim box (for under) and right trim box (for over) and then dragging will add or lose frames according to the direction the boxes are dragged.

Match Frame

Match Frame enables the user to match a clip frame by frame should part of the clip be deleted, need replacing or should a segment need to be extended using the original clip or rushes.

Selecting the match frame key (<F9> on the keyboard) will display a Floating Clip of the original clip (or rushes) at the current frame on the Time Line. Navigation through the clip on the Time Line will be matched by the image in the Floating Clip.



The 'Floating Clip', called up by the match frame process, can be re-sized and used in exactly the same way as any other 'Floating Clip'.

The Tab key on the keyboard can be used to swap focus between the Time Line clip and the 'Floating Clip'.

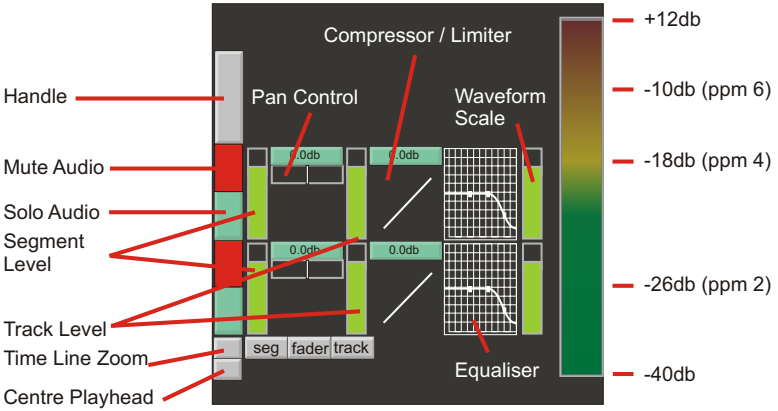
Previewing the Edit

Play out

The edit can be previewed at any stage on the clean SD and HD monitor outputs provided. Selecting the *HD* box in the bottom right-hand corner of the menu will enable the system's HD output. Deselecting it will enable the system's clean SD output. The *A* box in the bottom right-hand corner of the menu is used to enable or mute the audio output during a preview of the edit.

Using Centre Play head Mode

Pressing the "Centre Play head" button will fix the Time Line Cursor in the horizontal centre of the screen so that when the clips on the Time Line are previewed the 'Time Line Cursor' stays in the middle of the menu display and the Time Line moves past it to the left.



Saving the Edit in the Library

The contents of the Time Line can be saved in the library using the *Save* box in the bottom-left hand corner of the menu area. The name, owner and category can be selected using the blue scrolling box next to *Save* and can be entered into the next box. Note that with each successive save the name's suffix number will be incremented so that previous versions are not accidentally overwritten in the library.

The saved edit will appear in the library as a single clip that can be further edited as required by dropping it back on the Time Line.

Editing

The Trim Window

Setting In and Out Points on the Time Line

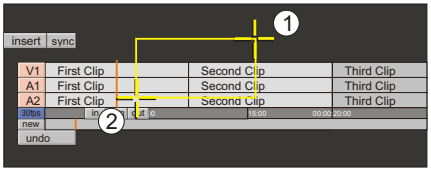
The in and out points of a clip can be altered using the *in* and *out* boxes at the bottom of the Time Line. Move the orange marker line over the clip to be trimmed. Press the *in* box and then drag it to the right and this will move the in point to later in the clip. Press the *out* box and then drag it to the left and this will move the out point to earlier in the clip. By selecting individual 'Edit Filter' boxes first, individual or groups of video and/or audio tracks can be altered at the same time and independently of the unselected tracks.

Inserting an Edit Point

Edit Points can be inserted manually anywhere along the Time Line by pressing the <Enter> or <Return> keys on the keyboard. This can be used to split a clip segment or insert a transition and slip the video/audio about the edit point.

Selecting the Trim Window

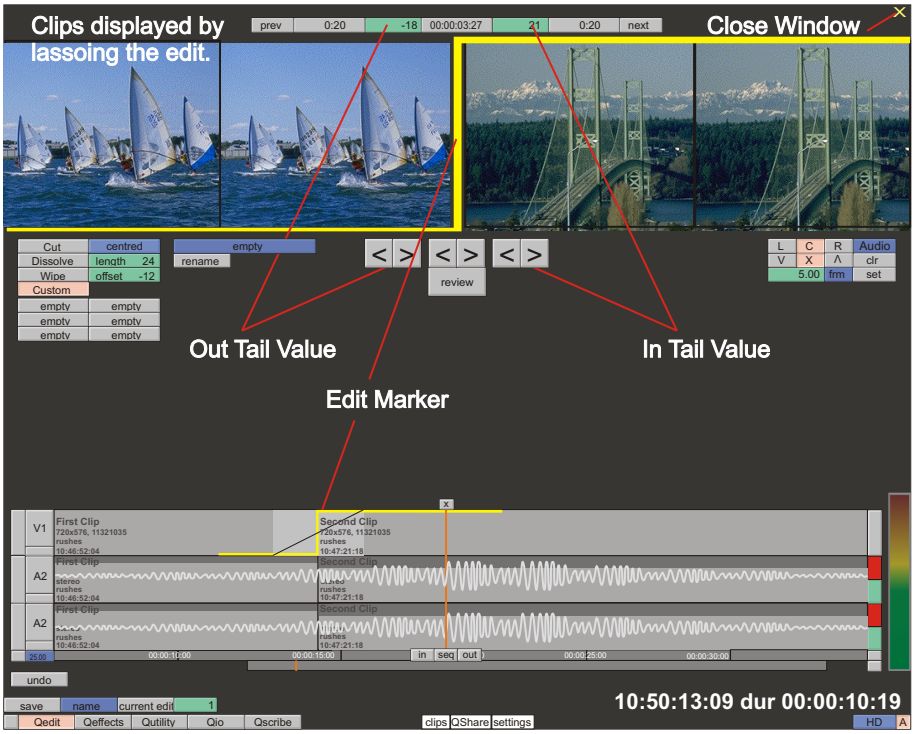
The in and out points of an edit transition and the type of transition, can be changed using the 'Transitions' display. This can be obtained by making a lasso around the edit to be altered.



① Place the pen cursor in the menu area as shown and press down. Drag the yellow box cursor to form the bottom-left corner of a box surrounding the edit to be altered then ② release pen pressure.

The Trim Window will appear on the desktop to replace the 'Edit Window' Clip Bins and Floating Clips.

Note that if more than one edit point is selected then a simplified version of the Trim Window will appear to allow the selected clip segments (for example cutaways) to be slipped with respect to the rest of the edit.



The green numeric boxes above the clips of video are used to alter the out point of the first clip and the in point of the second clip. The arrow boxes below the clips of video allow the in and out tails to be extended or shortened and allows the edit to be slipped.

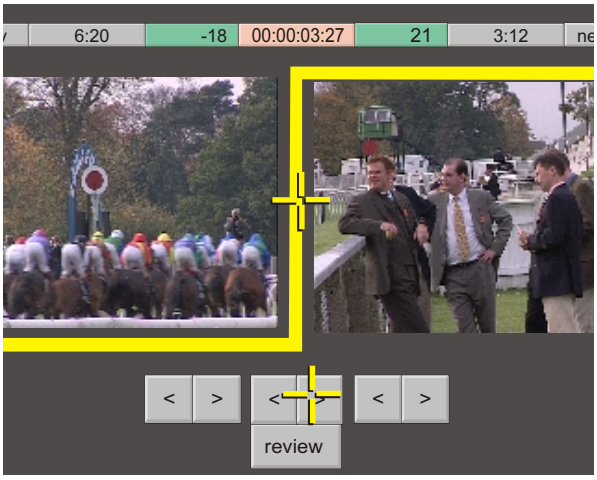
The top part of the screen shows the trim window. This displays the last few frames of the outgoing shot on the left and the first few frames of the incoming shot on the right. The resize button at the right of the window can be used to increase or decrease the number of frames displayed.

The horizontal yellow lines indicate the tails (i.e. the unused frames attached to each shot). If there are no horizontal lines, then all of the frames in the clip are being used. Use the *prev* and *next* boxes at either side to jump back to the previous edit point or forwards to the next edit point. The duration of each clip segment is shown here and on the track bars below.

Moving the Edit Point

The vertical line in the centre of the window is the edit marker and shows the edit point. The edit point can be moved to an earlier or later position. Press on the edit marker (not the pictures) and drag left or right. The edit marker changes colour from yellow to white.

The centre box above the edit marker will show the new position of the edit point and this can also be used to move the edit point by entering a specific timecode.



The edit point can only be moved if there are tails available.

Press on the arrow boxes directly below the edit marker, to move the edit point back or forward by one or ten frames.

Moving the edit point is also known as a centre trim. When ten frames are added to the outgoing clip segment, then ten frames will be subtracted from the incoming clip segment, so that the overall duration of the edit does not change. This kind of trim does not affect the synchronisation between pictures and audio.

Split Edits

Use the filters to select the track that needs to be extended. Only the tails on the tracks that have been selected will stay yellow. The centre boxes or edit marker can now be used to advance or delay the video or audio segments. Note that using the left or right trim boxes will break video/audio sync.

Adding and Losing Frames

Clip segments can be shortened by pressing down on a frame and dragging towards the edit point. The tails will increase as more frames are pushed under the edit point and the picture changes accordingly.

To increase the length of the segment, press on a frame and drag it away from the edit point. This will pull out frames from the tails.

Press the *Review* box to play the trimmed edit. Press on *Review* and drag left to increase the preroll for the review. The clip will continue to play until it is stopped using the space bar, the controller or by tapping on the Time Line.

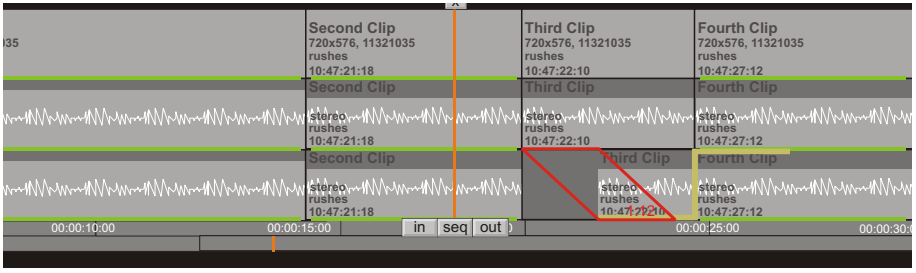
Video/Audio Sync Indication and Lock

Sync Indication

When an audio and video track are edited independently of each other (for example when the track filters have been selected) there is always a danger of breaking the relationship between them. For example, if frames are added only to the video track, all the following frames will move along to make room for the new ones. The audio track, however, will stay where it is and the audio will be heard before the pictures that match it are seen.

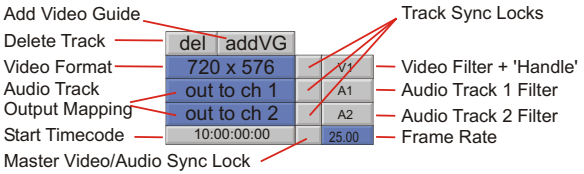
The Time Line can display the synchronisation of the video and audio segments on the Time Line. The display can be turned on and off in the configuration menu using the *Editor - Show Sync* scrolling menu.

When video and audio from the same original clip are split during editing, the affected audio segments will be shown with either a red underscore or with a red parallelogram with an audio slip value. Segments that are correctly synchronised will be shown with a green underscore. Note that there will not be a green or red line where video and audio segments have no real relationship.



Sync Lock

Typically when the content of recorded video and audio are matched (for example a person talking to camera) sync lock must be maintained at all times. Other material such as audio effects tracks or commentaries from other sources may need to be slipped to correspond with events on the edit Time Line.



Sync lock can be maintained automatically by selecting the small button in the bottom left-hand corner of the Time Line display next to the audio track button.

The larger buttons to the left of the audio track buttons allow sync lock to be removed from specific tracks.

When the tracks that have been sync locked are edited, the system will automatically force the audio or video to follow. For example if a video-only segment is inserted into the video track then the audio tracks that are locked to it will have silence inserted to maintain video/audio synchronisation. Likewise if a segment of video is removed then the corresponding audio track segment will also be removed.

Correcting Broken Sync

When audio/video sync is lost it can be corrected using the undo function. It can also be corrected by calculating how many frames the track is out of sync and sliding the audio segments correspondingly to regain sync. The video and audio track segments when expanded, display their source timecodes. Calculate the difference between the audio and video timecodes and then reposition either the video or audio track segment by this value.

Cutaways

Sliding Along the Time Line

To move the position of a cutaway, lasso both the in and the out points of the cutaway shot. Three clip segments will then be displayed in the trim window, the cutaway should be in the centre. Press on a frame to the left of the cutaway and drag left to slide the cutaway to an earlier position. Press on a frame to the right to drag the cutaway to a later position.

This is a centre trim and doesn't change the overall duration of the edit. The duration of the shots on both sides of the cutaway will change as the clip segment is moved.

A value can be entered in the *slide* box above the pictures instead of dragging on a frame. A negative value moves the clip segment to an earlier position in the Time Line.

Slipping In and Out Points

Make sure both the in and the out points of the cutaway segment are lassoed. Press on a frame in the cutaway and drag left or right to slip the in and out points. The duration of the cutaway will not change.

A negative value in the *slip* box above the pictures moves both in and out points earlier. A positive value moves both points later.

Video Dissolve

Setting up a Video Dissolve

To produce a dissolve from the end of one clip to the beginning of the next clip use the following simple procedure:

i Extend the out tail of the first clip past the edit point and into the second clip.

ii Extend the in tail of the second clip before the edit point and into the first clip. Note that this requires a negative value to be entered into the green in box.

iii Select the *Dissolve* box in the *Trans* menu and enter a suitable duration into the *Length* box. Note that this value must be smaller than the total length of the in and out tails.

iv Select the position of dissolve about the edit point from the blue scrolling box:

centred	This will produce a transition centred about the edit point.
before	This will produce a transition that starts in the first clip and ends at the edit point.
after	This will produce a transition that starts at the edit point and continues into the second clip.
any	This will produce a transition that is similar to centred but its start is offset from the edit point.

The system will automatically produce the dissolve as soon as the dissolve parameters have been set up.

Note that creating a video dissolve does not automatically produce an audio fade. This can be performed using the audio editing functions to the right of the menu under the clips of video.

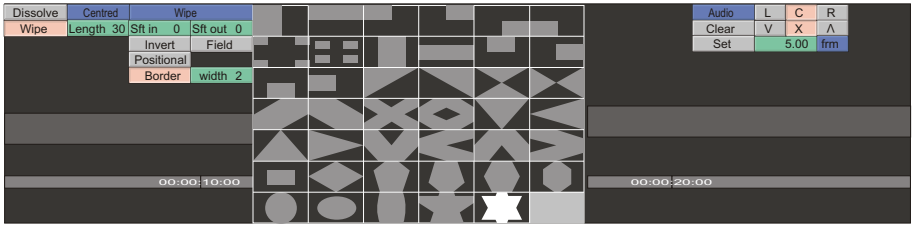
Clearing a Video Dissolve

To clear a dissolve simply select the edit and turn off the *Dissolve* box.

Video Wipes

Setting Up a Wipe

When *Wipe* is selected, the menu changes to show the options that are available.



To produce a wipe from the end of one clip to the beginning of the next clip use the following simple procedure:

i Extend the out tail of the first clip past the edit point and into the second clip. To do this use the left-hand arrow box beneath the clip miniatures or the left-hand green numeric boxes above.

ii Extend the in tail of the second clip before the edit point and into the first clip. To do this use the right-hand arrow box beneath the clip miniatures or the right-hand green numeric boxes above. Note that this requires a negative value to be entered into the green in box.

iii Select the *Wipe* box in the *Trans* menu and enter a suitable duration into the *Length* box. Note that these values must be smaller than the total length of the in and out tails.

iv Select the position of wipe about the edit point from the blue scrolling box as detailed for dissolves.

v Select the required wipe shape from the displayed choices. Press on the currently displayed shape and all of the possible choices are displayed. Press on the required one. Note that the wipes can be inverted using the *Invert* button.

vi The centre of the wipe shape can be repositioned as required by selecting the *Positional* box and by adjusting the X and Y values accordingly.

vii A coloured border of selected width can be applied to the edge of the wipe shape by selecting a colour from the colour wheel. Both inside and outside edges of the wipe shape can be softened by increasing the values in the *Sft in* and *Sft out* numeric boxes.

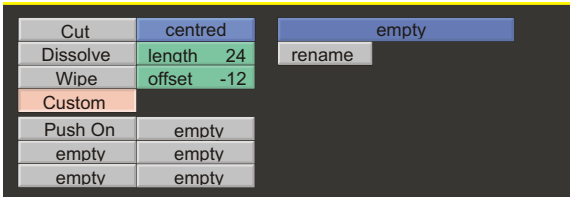
The system will automatically produce the wipe as soon as the wipe parameters have been set up.

Note that creating a video wipe does not automatically produce an audio fade. This can be performed using the audio editing functions to the right of the menu under the clips of video.

Clearing a Wipe

To clear a wipe simply select the edit then turn on and off the *Dissolve* box. To remove any unwanted tails use the arrow boxes below the clip miniature or the 2 slip boxes above.

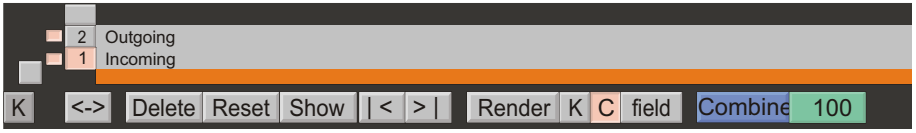
Custom Transitions



In addition to cuts, dissolves and wipes, custom transitions can be selected from the Trim Window.

Custom transitions are created using the Paintbox application by selecting the Paintbox application from within the Trim Window with *Custom* selected.

A custom transition is created by placing the out tail of the first clip over the in tail of the next clip as layers in a 'pack' - layer 2 being the out tail of the first clip and layer 1 being the in tail of the next clip. Any of the Paintbox processes (such as Dve position, size, spin, colour corrections, blur, etc) can be applied to these layers to create the desired transition.



For example a simple push off can be created by repositioning the 2 layers with 2 keyframes, one at the first frame and one at the last frame. At the first keyframe set the layer 2 *pos* to 0 and layer 1 *pos* to -16 at the second keyframe set the layer 2 *pos* to 16 (i.e. screen width) and layer 1 *pos* to 0. The second clip should then 'push off' the first clip.

There is no need to render the transition in the Paintbox application as this will be done automatically when returning to the Trim Window in the Edit application. A yellow thermometer will appear along the bottom of the menu above the application bar to indicate the current rendering progress.

The custom transition will automatically be applied to the edit when returning to the Trim Window in the Edit application and can also be saved in the 'settings bin' for future use. Once a transition has been saved it can be added as a favourite to one of the empty boxes in the Trim Window. These favourites are also available in the Transition Menu that can be selected using the <Y> or <F5> keys on the keyboard.

The empty boxes can be loaded by dragging transition settings from the 'settings bin' on the application bar and then dropping them on the "empty" or previously loaded boxes.

The currently selected custom transition can be renamed if required using the *rename* box. Pressing this box will display a soft keyboard to allow the existing name to be changed.

Audio Fade

Setting up an Audio Fade

L	C	R	Audio
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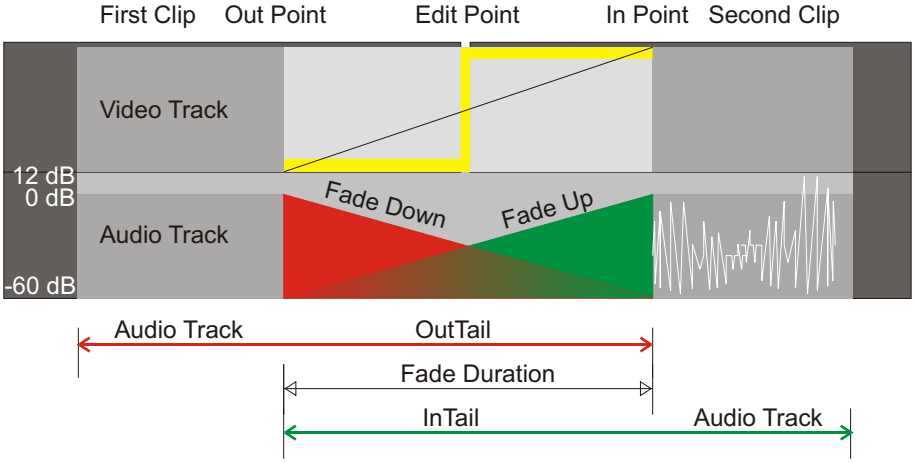
5.00		frm	set

An audio fade can be set up independently of the video edit (cut, dissolve or wipe) by using the audio boxes to the right of the Transitions display in conjunction with the audio display.



On the audio display the fade-down of the first audio track is indicated by the red triangle that appears on the display when the cursor is placed in that area. This can be used to ‘slip’ the fade-down with respect to the edit point of the video edit. Placing the cursor on the top part of the red triangle then dragging left or right sets where the fade-down starts. Dragging the bottom of the red triangle sets where the fade-down finishes. Dragging in the middle of the red triangle allows the fade-down to be slipped with respect to the edit point.

The fade-up of the second audio track is indicated by the green triangle that appears on the display when the cursor is placed in that area. This can be used to ‘slip’ the fade-up with respect to the edit point of the video edit. Placing the cursor on the top part of the green triangle then dragging left or right sets where the fade-up finishes. Dragging the bottom of the green triangle sets where the fade-up starts. Dragging in the middle of the green triangle allows the fade-up to be slipped with respect to the edit point.

To clear an audio fade simply select the *clear* box.

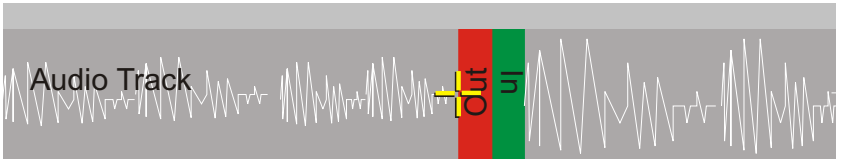
The green numeric box next to the *Set* box is used to define the total duration of the audio fade either in frames or in milliseconds and the type and position of the fade is controlled by the following boxes:

L	The fade starts before the edit point (at a point within the in tail of the second clip) and ends at the edit point
C	The fade is centred about the edit point (starting and stopping within the extents of the audio tails).
R	The fade starts at the edit point and ends after the edit point (at a point within the out tail of the first clip).
V	The first clip is faded-down before the second clip is faded-up.
X	This is an audio cross fade.
^	The second clip is faded-up before the first is faded-down.

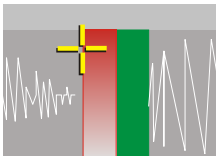
Audio Waveform Display

The audio waveform display can be used to accurately edit the audio track between video frame boundaries. The vertical scale of the waveform can be adjusted using the hidden green boxes at the right of the Time Line when the Time Line is expanded vertically.

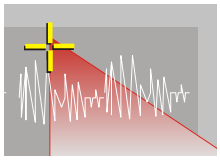
When the cursor is held over an edit point, the beginning of the next shot appears as a green bar. The red bar changes the end of the previous clip segment. Press in the middle of the bar and drag it to advance or delay where the audio starts. Make sure the bar is a solid colour.



Fades can be created using the red and green bars.



Press and drag at the top or bottom of the bar to create a fade. Make sure the bar is a graduated colour.



A crossfade can be created by pressing between the red and green bars and pushing upwards. The red and green bars can still be adjusted individually. Pressing on the crossfade allows it to be slid along the track to change the position of the fade.

Closing the Trim Window Display

The Trim Window can be closed by pressing on the hidden X box in the top right corner of the display or by tapping down in the menu area above the Time Line.

Reworking an Edit Transition

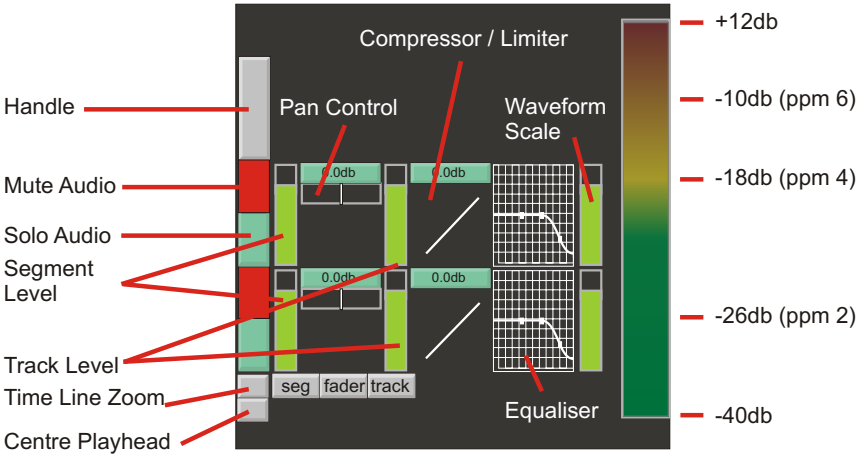
At any time the transition can be changed by selecting the edit and making the required changes. Note the required transition can be selected by using a lasso around the edit on the Time Line or by using *Next* or *Prev* to step through to it if the Transition Display is already on screen.

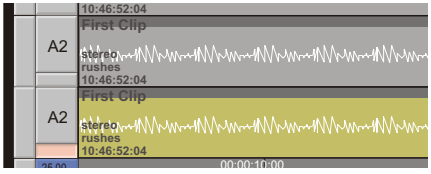
Editing

Audio Processing

Setting Audio Levels

Audio level indicators are available at the right-hand end of the Time Line. The hidden menu (obtained by dragging the ‘handle to the left) allows the audio levels to be adjusted for each audio track and audio segment on the Time Line. To adjust the level, place the cursor on the audio level indicator and slide up to increase the volume or down to decrease the volume.





Direct control on the audio track bars to scale the audio levels directly is achieved by holding down the shift key or by enabling the buttons below the audio filters and selecting the audio segment to be adjusted.

The segment audio level can be set by placing the cursor over the audio track (until the audio envelope is highlighted in yellow) and by dragging the top edge of the envelope up to increase the volume or down to decrease the volume.

The 2 audio level indicators are available via the hidden menu at the right-hand end of the Time Line (obtained by dragging the ‘handle to the left). This allows the audio levels to be adjusted for each audio track and audio segment on the Time Line. To adjust the level, place the cursor on the audio level indicator and slide up to increase the volume or down to decrease the volume.

Direct control on the audio track bars can be used to scale the audio levels directly. This is achieved by enabling the buttons below the audio filters and selecting the audio segment to be adjusted. The segment audio level can be set by placing the cursor over the audio track (until the audio envelope is highlighted in yellow) and by dragging the top edge of the envelope up to increase the volume or down to decrease the volume.

If the *seg* button is selected the audio level of the current segment in the selected audio track (enabled by the filter boxes A1, A2, A3 etc at the left end of the Time Line or Floating Clip) can be changed using the corresponding green numeric boxes or using the corresponding track slider on the fader panel.

If the *fader* button is selected, the level of the track can be changed dynamically as it is played using the corresponding track slider on the fader panel. This will be indicated by white nodes on the audio track.

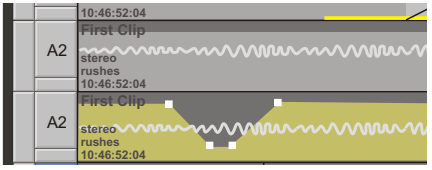
If the *track* button is pressed, the level for the whole audio track can be increased or decreased by the amount entered in the corresponding green track level box or by using the corresponding track slider on the fader panel.

The green audio level boxes are calibrated in decibels. A value of 0.0 indicates that the audio level is the same as when recorded, a positive value indicates that the level has been amplified with respect to the original and a negative value indicates that the level has been attenuated with respect to the original.

The red buttons are used to mute specific audio tracks so that they do not contribute to the overall output during monitoring. The green buttons allow a single track to be heard. These do not however, affect the clip if it is saved or played-out to VTR.

Audio Rubber Banding

The audio level at any point on the audio track can now be controlled by a 'rubber band'.



Keyframes can be placed along the audio track, and modified when the audio tools box is enabled on the audio track.

The audio level at each keyframe can be adjusted by placing the cursor on the white keyframe of the audio and dragging up or down. The audio level between these keyframes will be an interpolated smooth change in level.

The audio level of individual segments can be set as required by placing the cursor over the audio track (until the audio envelope is highlighted in yellow) and by dragging the top edge of the envelope up or down to adjust the volume.

A keyframe can also be inserted on all audio tracks at the same time by pressing the < / > key. To insert a keyframe only on selected audio tracks, hold down the shift key (< ⇧ >) and press the < / > key. Alternatively a keyframe can be inserted at the current frame by selecting the *Ins level* box accessed by holding down the <Alt> key and tapping on the audio track.

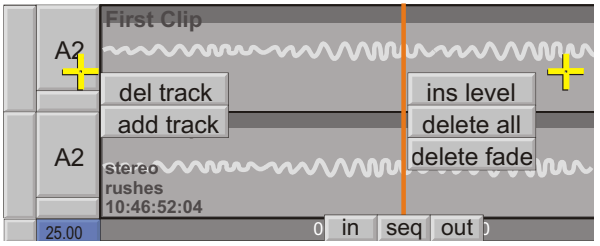
If the *fader* button, in the right-hand hidden menu, is selected the level of the track can be changed dynamically as it is played using the corresponding track slider on the fader panel. This will be indicated by white nodes on the audio track.

With the audio tool button selected, any keyframes can be moved by placing the cursor on it and dragging it left or right along the track. The level between 2 keyframes can be adjusted by dragging up or down between them on the audio track.

With the audio tool button selected, any keyframe can be deleted by selecting the *del* box (left-hand hidden menu) and then pressing on the white keyframes on the audio track. Pressing between keyframes will delete all keyframes. Alternatively, hold down the <Alt> key and tap on the keyframe to be deleted, then select *del level* from the menu that appears.

When audio transitions are applied at video break points, these will apply a corresponding change to any level changes made using the 'rubber band'. The track and segment levels will apply an overall change to the audio levels by scaling the effect of the 'rubber band'.

Hidden Track Menus



Holding down the <Alt> key on the keyboard and pressing on the audio track button or on the audio track itself will display hidden menus.

Pressing the *del track* box will delete the currently selected track.

Pressing *add track* will add a new audio track at the bottom.

Pressing *ins level* will add an audio keyframe at the point on the track that the cursor was pressed.

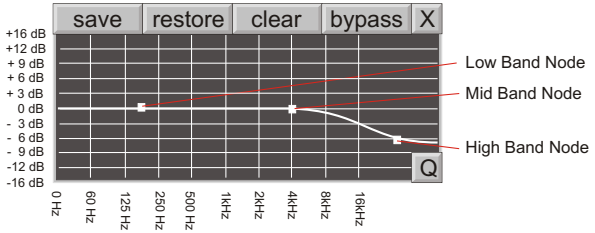
Pressing *del level* will delete an audio keyframe.

Pressing *delete all* will delete all audio keyframes on the currently selected track.

Pressing *delete fade* will delete an audio fade, indicated by red or green shading.

Graphic Equaliser

When the graphic equaliser is selected in the right-hand hidden menu it will be displayed in a larger form to allow accurate adjustment. The graphical display can be closed by pressing the *X* box on the right.



A three band graphic equaliser is provided for each audio track on the Time Line. This is controlled directly using the graph display under the right-hand hidden menu.

This graph displays gain along the vertical axis and frequency along the horizontal axis. The frequency response of the graphic equaliser is shown by the white curve intersecting the 3 white square nodes that indicate the 3 frequency bands.

The centre frequency and gain/attenuation for each of the 3 bands (low, mid and high) can be changed by selecting the individual white nodes on the graph and dragging. Placing the cursor on the white nodes will display their current values.

Dragging a white node left or right will decrease or increase the centre frequency for that band. Dragging the white node down or up will attenuate or amplify the frequencies in the band.

The nominal width of each of the 3 bands is 1000hz, but each band can be adjusted between 100hz and 4000 Hz by selecting the *Q* box and sliding the white node up and down.

By moving the white nodes closer together it is possible to create high pass, low pass and band stop filters for the audio.

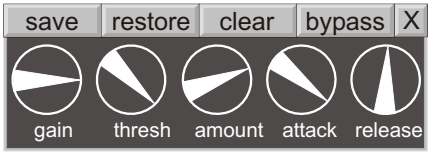
The graphic equaliser settings can be reset by holding the shift key on the keyboard and pressing on the graph with the cursor.

Note that to hear the effect of the 3 band equaliser during set up it may be necessary to mute or solo individual audio tracks on the Time Line.

save	Pressing the *save* box will save the settings of the currently selected graphic equaliser in a buffer.
restore	Pressing the *restore* box will apply the settings currently held in the buffer to the currently selected track graphic equaliser.
clear	Pressing the *clear* box will clear the settings of the currently selected track graphic equaliser.
bypass	Pressing the *bypass* box will disable the effect of the graphic equaliser.
Q	Pressing the *Q* box then selecting a node on the graph allows the size of the band to be adjusted.
X	Pressing the *X* box in the top right corner on the graphic equaliser will close the menu.

Audio Compressor/Limiter

The Audio Compressor/Limiter is accessed by pressing in the hidden audio menu below the green track level box and closed by pressing the *X* box in the corner of the menu. The menu controls the currently selected track only but the settings can be transferred from one track to another.



The values in the dials can be controlled directly using the cursor or by tapping on the dials to display green numeric boxes.

The compressor provides a form of automatic level control. It attenuates high levels by reducing the dynamic range, making it much easier to control signals and set appropriate audio levels. Limiting is an extreme form of compression, where the output signal is sharply attenuated so that it cannot exceed a particular level.

save — Pressing the *save* box will save the current settings in a buffer so that it can be applied to other tracks.

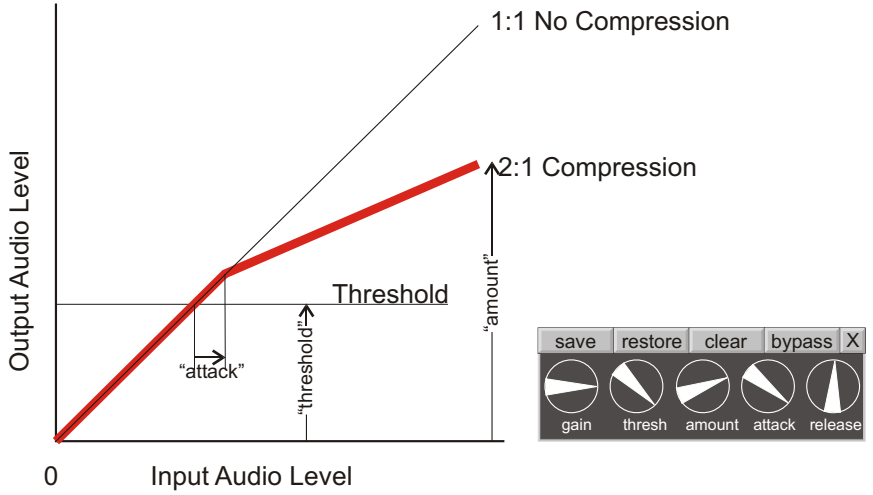
restore — Pressing the *restore* box will apply the settings currently held in the buffer to the currently selected track.

clear — Pressing the *clear* box will clear the settings of the currently selected track.

bypass — Pressing the *bypass* box will disable the effect of the compressor/limiter for the selected track.

X — Pressing the *X* box in the top right corner will close the menu.

Compression is expressed in terms of a ratio which defines how much of the output audio level is produced for any given input level. A ratio of 1 : 1 means that the audio will be unaffected by compression.



The "gain" control sets the overall output audio level to compensate for the apparent loss due to the compression of audio with a large dynamic range.

The "thresh" (threshold) controls set the level above which compression starts.

The "amount" value sets the compression ratio.

The "attack" control sets how quickly the compression takes place after the audio level has exceeded the threshold level.

The "release" control sets how quickly the compression is turned off after the input audio level has dropped below the threshold level.

Additional Processes

Clip Logger

Introduction

The clip logger allows the original recorded source clip to be marked at different events with a visual flag and with a description of the event. The duration of the event can also be flagged with different coloured flags to highlight up to 4 event types (for example goals, penalties, red card, yellow card).

These marked events can be seen wherever the source clip is viewed, whether it is the source clip that is viewed or an edited clip that contains part or all of the source clip.

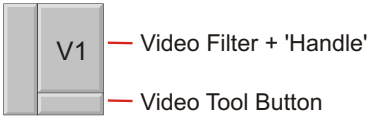
It is not possible to add events to a source clip that has been trimmed or been edited with other clips. However, it is possible to add events to the original source clip or a copy of it.

Each log event contains the following detail:

start source timecode
end source timecode
type of event (4 user defined types available)
comment (multiple line text)

Viewing Events

Log events can be viewed beneath the Edit window in the Edit application, on Floating Clips and in the Clip Bin.



The display of log events is enabled by turning on the Video Tool button under the *V* box at the left hand end of the video Time Line.

Log events are displayed as a text window under the video window. This displays the source timecodes and text of the most recent log event in the clip. It will be updated as the clip is navigated. Each event is indicated on the video Time Line with a vertical bar of the event colour, followed by a highlight of the same colour for the duration of the event.

Entering Events

Log edit mode is enabled by holding down the <Ctrl> key and pressing <L>. In this mode the text window will have a white border and a blue "LOGGING ON" box appears.

If the Time Line cursor is positioned before any existing events, or if there are no log events on the clip, the timecode on the top line will be blank (--:--:--:--).

To mark a log event press <F5>, <F6>, <F7> or <F8> for the appropriate event type. Comments can then be typed using the keyboard.

The text can contain multiple lines and can be navigated with the cursor keys.

Text selection techniques using mouse or cursor and editing keys (<Home>, <End>, <Ctrl>+<X>,<Ctrl>+<C>, <Ctrl>+<V>) allow cut and paste between the log window and other applications.

Events can be a single frame duration (this is the default), or can be given a duration by terminating the event by pressing <F12>.

When in Log edit mode, clip navigation must be performed using either the Hand Unit or the Jog/Shuttle panel as the whole of the keyboard is devoted to text entry.

New events can be entered while the clip is playing or stationary.

Note that it is not possible to enter an event that overlaps another.

The current event can be deleted by holding down the <Ctrl> key and pressing <Delete>.

To exit Log edit mode hold down the <Ctrl> key and press <L>. This will release the keyboard to allow normal operation such as clip navigation.

Event Prefix Text

Each of the 4 event types can have a line of default text associated with it, which gets entered automatically when an event is added. This text is editable.

Navigation between Events

Whilst displayed, positioning the cursor above an event will display the source timecode and the first part of its text. Clicking on the event will move the Time Line cursor to that event making it the current frame.

The up and down keys (not in log edit mode) move to between log start and end locations in addition to the other clip events.

Printing a Clip Log

It is possible to output the log of the currently viewed clip (white border on video), by holding down the <Ctrl> key and pressing <P>. This will create a text file in the c:/data/Clip Logger/ directory with a title matching that of the clip ("clip name.txt").

The file name may differ from the clip name in order to remove any characters not supported by the operating system.

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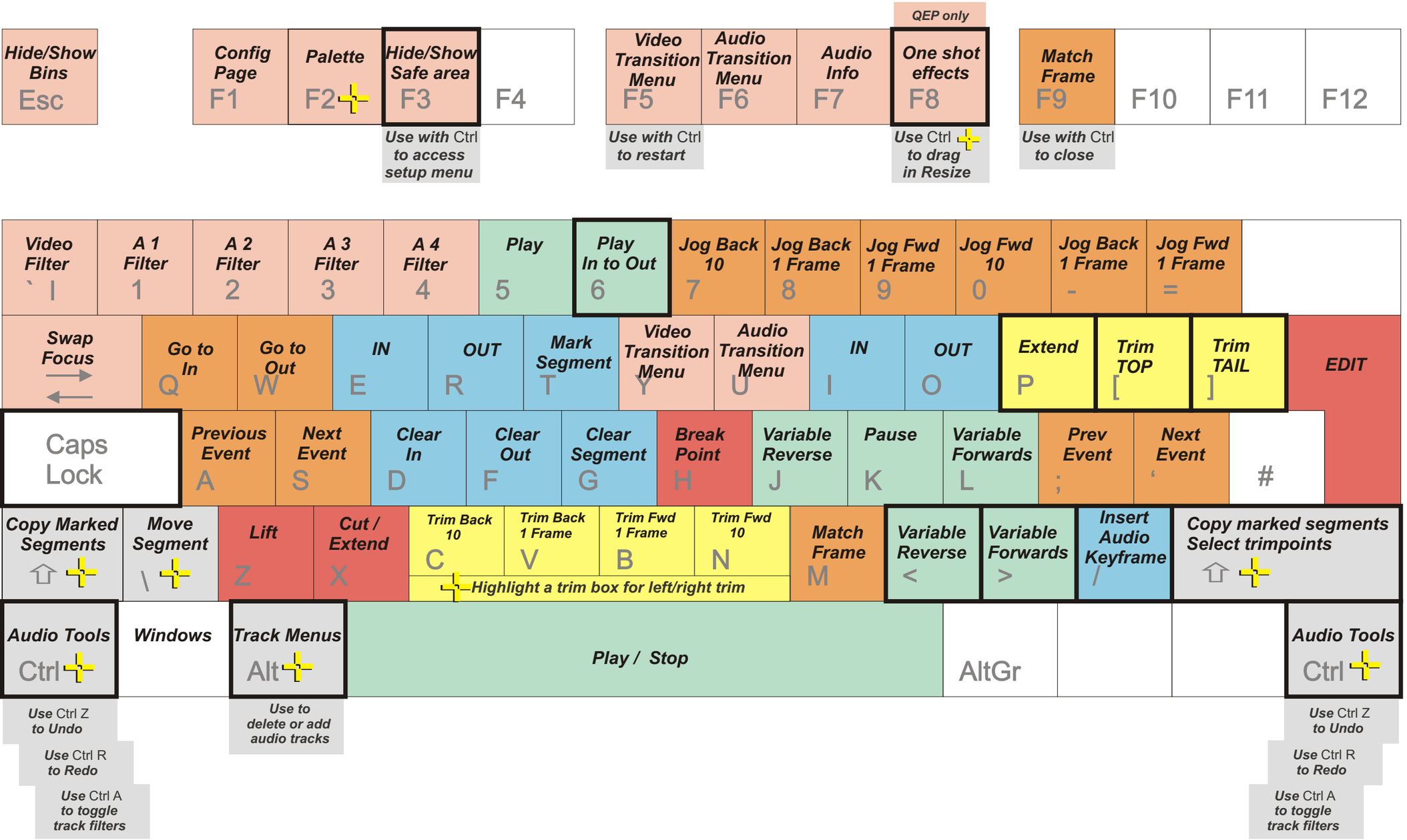

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KEYBOARD MAP for editing

release 2.0